Intermediate Algebra

WITH APPLICATIONS

textbook alignment to the

Utah
Core Curriculum
Algebra 2

McDougal Littell
A DIVISION OF HOUGHTON MIFFLIN
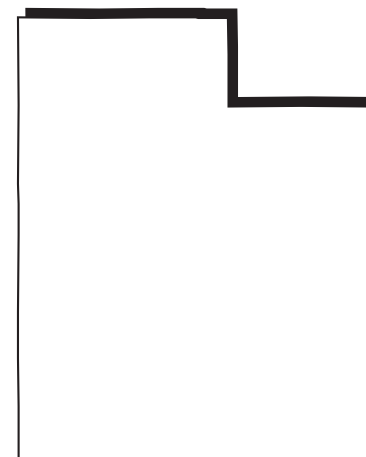
Textbook Alignment to the Utah Core – Algebra 2

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.)   **Yes** <u>X</u>   **No**____

Name of Company and Individual Conducting Alignment: <u>McDougal Littell</u> and <u>McHugh & Associates, Inc. Jessica Mandell</u>

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

   On record with the USOE.

   <u>X</u>   **The "Credential Sheet" is attached to this alignment.**

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Algebra 2 Core Curriculum

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Title: <u>Intermediate Algebra with Applications</u>   **ISBN#: SE:** <u>978-0-618-80368-2</u>

Publisher: <u>McDougal Littell</u>

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: _____ %

Overall percentage of coverage in *ancillary material*s of the Utah Core Curriculum: _____ %

STANDARD I: Students will use the language and operations of algebra to evaluate, analyze and solve problems.			
Percentage of coverage in the *student and teacher edition* for Standard I:_____ %	Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____%		
OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (*pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries,*
Objective 1.1: Evaluate, analyze, and solve mathematical situations using algebraic properties and symbols.			
a. Solve and graph first-degree absolute value equations of a single variable.	**109-110, 113 (#1-6), 114 (#7-52), 116 (#96-97), 117 (#100-102), 123 (#19-21), 125 (#14-15, 18), 126 (#19-20), 220 (Cumulative Review Exercises #6), 369 (Cumulative Review Exercises #8), 434 (Cumulative Review Exercises #3), 764 (#7)**		
b. Solve radical equations of a single variable, including those with extraneous roots.	**467-469, 471 (Concept Review #4, Exercises #2, 5-16), 472 (#17-61, 64), 473 (#66-71), 474 (#78-84), 475 (#85, 93-94), 491 (#49-50, 52-53), 492 (#23-24), 493 (#4), 494 (#34), 573 (#18), 610 (#20, 24)**		

OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (*pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
c. Solve absolute value and compound inequalities of a single variable.	99-101, 102 (Example 7), 104 (#47-48), 105 (#53-82), 106 (#83-90, 97-100), 108 (#109-110, 115-119), 110-112, 113 (Concept Review #5), 114 (#53-62), 115 (#63-78, 81-86), 116 (#87-95, 98-99), 123 (#15-18, 22-26), 124 (#36), 125 (#13, 16-17, 20), 126 (#16-18, 21-22), 220 (Cumulative Review Exercises #5, 7), 284 (#5-7), 493 (#8-9), 573 (#19), 609 (Cumulative Review Exercises #4, 7), 672 (#3), 764 (#7-8)		
d. Add, subtract, multiply, and divide rational expressions and solve rational equations.	382-393, 399-411, 431 (#9-14), 432 (#15-18, 22-25), 432 (#31-33), 433 (#34-36, Chapter 6 Test #3-8), 434 (#13-14, 16, 18-19, Cumulative Review Exercises #2), 435 (#7, 20, 22), 436 (#28, 36-37), 573 (#2, 9, 15-16), 609 (Cumulative Review Exercises #3, 14-15), 764 (#5, 16-17, 19), 765 (#28)		
e. Simplify algebraic expressions involving negative and rational exponents.	291-292, 296 (#45, 52-71, 76-77), 297 (#82-90), 366 (#5-6), 368 (Chapter 5 Test #3), 370 (#21-22), 435 (#9, 16), 440 (Example 2, Problem 2), 444 (Exercises #4), 445 (#19-60), 446 (#61-87), 490 (#2-4), 492 (Chapter 7 Test #1-3), 493 (#15-16), 573 (#13), 764 (#21-22)		

OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE)* *(pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
Objective 1.2: Solve systems of equations and inequalities.	**223-232, 232-242, 245-248, 253-255, 257 (#22-42), 259 (#61-72), 260 (#73-81), 261-271, 272-275, 277 (Projects & Group Activities), 281 (#1-6, 9-15), 282 (#17-26, Chapter Test #1-4), 283 (#5-8, 11-20), 284 (#19-20, 22-24), 285 (#25-28), 369 (Cumulative Review Exercises #15-16), 370 (#19, 29), 435 (#35), 493 (#26), 573 (#21-22), 672 (#15-16), 743-749, 751-752, 755 (#31-42), 756 (#47-58), 761 (#15-18), 762 (#23-26, Chapter Test #6), 763 (#7-8, 17-18, 20), 765 (#29, 35), 766 (#47-48), 767 (#54)**		
a. Solve systems of linear, absolute value, and quadratic equations algebraically and graphically.	**223-232, 232-242, 245-248, 253-255, 257 (#22-42), 259 (#61-72), 260 (#73-81), 261-271, 277 (Projects & Group Activities), 281 (#1-6, 9-15), 282 (#17-20, 23-26, Chapter 4 Test #1-4), 283 (#5-8, 11-15, 18-20), 284 (#19-20, 22-23), 285 (#25-28), 369 (Cumulative Review Exercises #15-16), 370 (#19, 29), 435 (#25), 493 (#26), 573 (#22), 672 (#15-16), 744, 747 (Exercises #2), 748 (#3-8, 15-16, 21-22, 31-32), 761 (#15, 17), 763 (#7), 765 (#29, 35), 766 (#47-48), 767 (#54)**		

4

	OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
b.	Graph the solutions of systems of linear, absolute value, and quadratic inequalities on the coordinate plane.	**272-275, 282 (#21-22), 284 (#16-17), 284 (#24), 370 (#20), 435 (#18), 573 (#21), 751-752, 755 (#31-42), 756 (#47-52), 762 (#23-26), 763 (#20)**		
c.	Solve application problems involving systems of equations and inequalities.	**231 (#75-78), 232 (#87b), 242 (#75), 261-271, 282 (#23-26), 283 (#19-20), 285 (#25-28), 494 (#29, 31), 766 (#47), 767 (#54)**		
Objective 1.3: Represent and compute fluently with complex numbers.		**476-486, 491 (#26-43), 492 (Chapter 7 Test #18-22), 493 (#20), 573 (#12), 609 (Cumulative Review Exercises #16), 672 (#9), 764 (#11)**		
a.	Simplify numerical expressions, including those with rational exponents.	**476-486, 491 (#26-43), 492 (Chapter 7 Test #18-22), 493 (#20), 573 (#12), 609 (Cumulative Review Exercises #16), 672 (#9), 764 (#11)**		
b.	Simplify expressions involving complex numbers and express them in standard form, $a + bi$.	**476-486, 491 (#26-43), 492 (Chapter 7 Test #18-22), 493 (#20), 573 (#12), 609 (Cumulative Review Exercises #16), 672 (#9), 764 (#11)**		

OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
Objective 1.4: Model and solve quadratic equations and inequalities.	**496-505, 506-520, 528-534, 534-535, 537 (Exercises #5-8), 538 (#9-10, 21-29), 539 (#30), 570 (#1-4, 8-10, 16, 18), 571 (#31-32, 37-38), 572 (#1-2, 5-6, 8, 19), 764 (#25)**		
a. Model real-world situations using quadratic equations.	**505 (#158), 519 (#153-156), 528-534**		
b. Approximate the real solutions of quadratic equations graphically.	**566**		
c. Solve quadratic equations of a single variable over the set of complex numbers by factoring, completing the square, and using the quadratic formula.	**496-497, 500 (Exercises #7-8), 501 (#9-48), 506-520, 569, 570 (#1-4, 8-10), 571 (#37-38), 572 (#1-2, 5-6, 8, 19), 764 (#25)**		
d. Solve quadratic inequalities of a single variable.	**534-535, 537 (Exercises #5-8), 538 (#9-10, 21-29), 539 (#30), 571 (#31)**		
e. Write a quadratic equation when given the solutions of the equation.	**497-498, 502 (#52-82), 505 (#141-149), 570 (#7), 572 (#4), 672 (#11), 764 (#12)**		

STANDARD II: Students will understand and represent functions and analyze function behavior.			
Percentage of coverage in the *student and teacher edition* for Standard II:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: _____ %**		
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	*Not covered in TE, SE or ancillaries*
Objective 2.1: Represent mathematical situations using relations.	*Found throughout text. See, for example:* **144-164, 165-179, 373-375, 460-467, 540-556, 576-583, 584-591, 592-601, 612-622, 638-645**		
a. Model real-world relationships with functions.	**192-193, 196-197, 218 (#29), 219 (#20), 221 (#25)**		
b. Describe a pattern using function notation.	**193, 219 (#29), 219 (#20)**		
c. Determine when a relation is a function.	**146-147, 154-155, 156 (#5-14), 157 (#15-18), 161 (#95-97), 162 (#98-103, 111), 213, 216 (#6, 22), 219 (#15, 19), 576 (Prep Test #6)**		
d. Determine the domain and range of relations.	**146, 150 (Example 4), 151 (Problem 4), 156 (#5-12), 159 (#57-64), 213, 219 (#15), 374 (Example 2), 375 (Problem 2, Example 3, Problem 3), 377 (Exercise #4), 378 (#15-38), 431 (#3-5), 434 (#9, Cumulative Review Exercises #4), 435 (#21), 461, 461 (Example 1, Problem 1), 463 (Concept Review #2-3, Exercises #4-5), 464 (#6a, 7-25), 491 (#45-46), 492 (Chapter 7 Test #6-7), 493 (#22), 576 (Prep Test #6)**		

OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
Objective 2.2: Evaluate and analyze functions.	*Found throughout text. See, for example:* **144-164, 165-179, 213, 215 (#1, 3), 216 (#5-11, 13, 21-22), 218 (#1-4, 8), 373-375, 377 (Exercises #3-4), 378 (#5-39), 379 (#40), 380 (#91), 381 (#92-94), 431 (#1-5), 433 (Chapter 6 Test #4), 434 (#9, Cumulative Review Exercises #4), 435 (#5, 17, 21, 26), 460-467, 491 (#45-48), 492 (Chapter 7 Test #6-7), 493 (#13, 22-23, 27), 540-556, 576-583, 584-591, 592-601, 612-622, 638-645**		
a. Find the value of a function at a given point.	**148-149, 150 (Example 4), 157 (#21, 25), 158 (#26-48), 159 (#49-64), 160 (#77-82), 161 (#83-94), 215 (#3), 216 (#5, 7), 218 (Chapter 3 Test #1, 8), 220 (#12), 284 (#8-10), 369 (Cumulative Review Exercises #9, 11), 374 (Example 1, Problem 1), 377 (#3), 378 (#5-14), 431 (#1-2), 433 (Chapter 6 Test #4), 435 (#5), 493 (#23), 576 (Prep Test #2-3), 675 (Prep Test #2), 612 (Prep Test #4), 675 (Test Prep #2)**		
b. Compose functions when possible.	**586-589, 590 (#28-29), 591 (#32-59, 66-79), 603 (#1), 604 (#2c-2d, 3a-3b, 4), 605, 606 (#9-12), 607 (Chapter 9 Test #6), 610 (#25), 672 (#14)**		

OBJECTIVES & INDICATORS		Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
c.	Add, subtract, multiply, and divide functions.	**584-586, 589 (Exercises #1-5), 590 (#6-27), 591 (#60-65), 605, 606 (#5-8), 607 (#2-5)**		
d.	Determine whether or not a function has an inverse, and find the inverse when it exists.	**593-595, 596 (Example 2, Problem 2), 598 (#23-24), 599 (#25-44, 48-50), 600 (#73-76), 601 (#77-78, 81a, 83-85), 605, 606 (#14), 607 (#17-19), 608 (#12-13, 16), 610 (#26), 765 (#36)**		
e.	Identify the domain and range of a function resulting from the combination or composition of functions.	*Opportunities to address this standard can be found on the following pages:* 584-591		
Objective 2.3: **Define and graph exponential functions and use them to model problems in mathematical and real-world contexts.**		**612, 615-617, 620 (#27-38, 41-44), 621 (#49-55), 6 (#57a, 58-59), 22, 654-656, 659 (#3-7), 660 (#8-15), 661 (#16, 23), 662 (#24-25), 663 (#34-37), 664 (#39), 670 (#27-28, 32), 671 (#14-15, 18-20), 673 (#25, 33)**		
a.	Define exponential functions as functions of the form $y = ab^x, b > 0, b \neq 1$.	*Opportunities to address this standard can be found on the following pages:* 612-622		
b.	Model problems of growth and decay using exponential functions.	**654-655, 656 (Example 1, Problem 1), 659 (#5-7), 660 (#8-15), 662 (#25), 663 (#34-37), 670 (#32), 671 (#19-20), 673 (#33)**		
c.	Graph exponential functions.	**614-617, 620 (#27-38, 41-44), 621 (#49-55), 622 (#57a, 58-59), 670 (#27-28), 671 (#14-15, 18), 673 (#25)**		

OBJECTIVES & INDICATORS		Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
Objective 2.4: Define and graph logarithmic functions and use them to solve problems in mathematics and real-world contexts.		**638-645, 670 (#29-30), 671 (#16-17), 673 (#26)**		
a.	Relate logarithmic and exponential functions.	**622-624, 633 (#4-20), 638-639, 642 (#2-15), 643 (#16-18), 668, 669 (#7), 670 (#29-30), 671 (#16-17), 673 (#26)**		
b.	Simplify logarithmic expressions.	**629-631, 635 (#83-108), 669 (#1-2, 13), 671 (#3), 765 (#37)**		
c.	Convert logarithms between bases.	**631 (Example 9, Problem 9), 636 (#129-140), 669**		
d.	Solve exponential and logarithmic equations.	**645-654, 669 (#4, 6, 8, 10-11, 14), 670 (#17, 20-22, 26, 32-33), 671 (#4, 7, 9-13, 20), 672 (#18-19)**		
e.	Graph logarithmic functions.	**638-645, 670 (#29-31), 671 (#16-17), 673 (#26), 766 (#42, 44)**		
f.	Solve problems involving growth and decay.	**654-655, 656 (Example 1, Problem 1), 659 (#5-7), 660 (#8-15), 661 (#16), 662 (#24-25), 663 (#34-37), 664 (#40-41), 670 (#32), 671 (#19-20), 673 (#33)**		

STANDARD III: Students will use algebraic, spatial, and logical reasoning to solve geometry and measurement problems.			
Percentage of coverage in the *student and teacher edition* for Standard III:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: _____%**		
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE) (pg #'s, etc.)***	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	*Not covered in TE, SE or ancillaries,*
Objective 3.1: Examine the behavior of functions using coordinate geometry.	*Found throughout text. See, for example:* **144-164, 165-177, 213, 215 (#3-4), 216 (#5-11, 13, 15-22), 373-375, 377 (#3-4), 378 (#5-39), 379 (#40), 380 (#91), 381 (#92-94), 431 (#1-5), 433 (Chapter 6 Test #4), 434 (#9, Cumulative Review Exercises #4), 435 (#5, 15, 17, 21, 26), 436 (#32), 460-467, 491 (#45-48), 492 (Chapter 7 Test #6-7), 493 (#13-14, 22-24, 27), 540-556, 557, 560 (Exercises #4-6), 561 (#7-24), 563 (#40-45, 46a), 570 (#5-6), 571 (#24-30, 35-36), 572 (#3, 7, 13-17), 576-583, 592-601, 612-622, 638-645**		
a. Identify the domain and range of the absolute value, quadratic, radical, sine, and cosine functions.	**460-461, 463 (Concept Review #1-3, Exercises #3-5), 464 (#6a, 8-9, 11-12, 19-22, 25), 491 (#45-46), 492 (Chapter 7 Test #6), 493 (#22), 543 (Example 2, Problem 2), 551 (#27-36), 571 (#35), 572 (#17)**		

11

OBJECTIVES & INDICATORS	Coverage in *Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)*	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries*
b. Graph the absolute value, quadratic, radical, sine, and cosine functions.	**152-153, 161 (#83-94), 215 (#3), 218 (Chapter Test #1), 461-463, 465 (#29-35, 45-49), 466 (#52a), 491 (#48), 493 (#13), 540, 542-543, 547 (Example 4), 550 (#9-23), 551 (#24-36), 553 (#83-88), 556 (#130), 563 (#46a), 571 (#35-36), 572 (#17)**		
c. Graph functions using transformations of parent functions.	**576-583, 604, 605, 606 (#1-4), 608 (#7-8, 10-11)**		
d. Write an equation of a parabola in the form $y = a(x\_h)^2 + k$ when given a graph or an equation.	*Opportunities to address this standard can be found on the following pages:* **721-728**		
Objective 3.2: Determine radian and degree measures for angles.	*Not addressed in this text.*		
a. Convert angle measurements between radians and degrees.	*Not addressed in this text.*		
b. Find angle measures in degrees and radians using inverse trigonometric functions, including exact values for special triangles.	*Not addressed in this text.*		
Objective 3.3: Determine trigonometric measurements using appropriate techniques, tools, and formulas.	*Not addressed in this text.*		
a. Define the sine, cosine, and tangent functions using the unit circle.	*Not addressed in this text.*		
b. Determine the exact values of the sine, cosine, and tangent functions for the special angles of the unit circle using reference angles.	*Not addressed in this text.*		
c. Find the length of an arc using radian measure.	*Not addressed in this text.*		
d. Find the area of a sector in a circle using radian measure.	*Not addressed in this text.*		

STANDARD IV: Students will understand concepts from probability and statistics and apply statistical methods to solve problems.			
Percentage of coverage in the *student and teacher edition* for Standard IV:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: _____ %**		
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	*Not covered in TE, SE or ancillaries*
Objective 4.1: Apply basic concepts of probability.	*Not addressed in this text.*		
a. Distinguish between permutations and combinations and identify situations in which each is appropriate.	*Not addressed in this text.*		
b. Calculate probabilities using permutations and combinations to count events.	*Not addressed in this text.*		
c. Compute conditional and unconditional probabilities in various ways, including by definitions, the general multiplication rule, and probability trees.	*Not addressed in this text.*		
d. Define simple discrete random variables.	*Not addressed in this text.*		
Objective 4.2: Use percentiles and measures of variability to analyze data.	*Not addressed in this text.*		
a. Compute different measures of spread, including the range, standard deviation, and interquartile range.	*Not addressed in this text.*		
b. Compare the effectiveness of different measures of spread, including the range, standard deviation, and interquartile range in specific situations.	*Not addressed in this text.*		
c. Use percentiles to summarize the distribution of a numerical variable.	*Not addressed in this text.*		
d. Use histograms to obtain percentiles.	*Not addressed in this text.*		